

CLAIMS:

1. A magnetic writer comprising:
a bottom pole; and
a top pole including a first top pole portion and a second top pole portion connected by a top pole extension at an air bearing surface of the magnetic writer, the first top pole portion positioned across a write gap from the bottom pole, the top pole extension orienting a magnetization of the first top pole portion substantially parallel to the air bearing surface.
2. The magnetic writer of claim 1, wherein the top pole extension has a uniform width at the air bearing surface.
3. The magnetic writer of claim 1, wherein the top pole extension has a greater length along the air bearing surface than the first top pole portion.
4. The magnetic writer of claim 1, wherein the bottom pole comprises a base pole and a notch pole, the notch pole positioned across the write gap from the first top pole portion and having a substantially similar shape as the first top pole portion at the air bearing surface.
5. The magnetic writer of claim 4, wherein the base pole is recessed from the air bearing surface.
6. The magnetic writer of claim 4, wherein the notch pole extends from the air bearing surface beyond a magnetic throat height of the magnetic writer.

7. The magnetic writer of claim 4, wherein the notch pole extends from the air bearing surface to a magnetic throat height of the magnetic writer.
8. The magnetic writer of claim 4, wherein a magnetization of the notch pole is oriented generally perpendicular to the air bearing surface.
9. The magnetic writer of claim 1, wherein the second top pole portion is substantially planar.
10. The magnetic recording head of claim 1, further comprising:
a conductive coil positioned such that at least a portion of the
conductive coil is positioned between the bottom pole and
the top pole.
11. The magnetic writer of claim 10, wherein the at least a portion of the
conductive coil is encapsulated in a gap layer which fills an area between the
bottom pole and the top pole.
12. The magnetic writer of claim 1, wherein the bottom pole and the top
pole are connected by a back gap closer distal from the air bearing surface.
13. A magnetic writer having an air bearing surface for confronting a
surface of a rotating disc, the magnetic writer comprising:
a bottom pole including a base pole and a notch pole; and
a top pole including a first top pole portion and a second top pole
portion connected by a top pole extension, the first top pole
portion positioned across a write gap from the notch pole,
the top pole extension having a uniform width at the air

bearing surface and a greater length along the air bearing surface than the first top pole portion.

14. The magnetic writer of claim 13, wherein the base pole is recessed from the air bearing surface to prevent fringe erasure fields.

15. The magnetic writer of claim 13, wherein the notch pole extends from the air bearing surface beyond a magnetic throat height of the magnetic writer.

16. The magnetic writer of claim 15, wherein the magnetic throat height is a distance from the air bearing surface to an edge of the first top pole portion distal from the air bearing surface.

17. The magnetic writer of claim 13, wherein the notch pole extends from the air bearing surface to a magnetic throat height of the magnetic writer.

18. The magnetic writer of claim 17, wherein the magnetic throat height is a distance from the air bearing surface to an edge of the first top pole portion distal from the air bearing surface.

19. The magnetic writer of claim 13, wherein the base pole and the notch pole have a substantially funnel cross-section such that a narrower portion of the substantially funnel cross-section is proximate to the air bearing surface.

20. The magnetic writer of claim 13, wherein the bottom pole and the top pole are connected by a back gap closer distal from the air bearing surface.

21. A magnetic writer having an air bearing surface for confronting a surface of a rotating disc, the magnetic writer comprising:

a top pole;

a bottom pole including a base pole and a notch pole, the base pole being recessed from the air bearing surface, the notch pole being positioned proximate to the top pole and extending from the air bearing surface to at least a magnetic throat height of the magnetic writer; and

a gap layer positioned between the top pole and the bottom pole.

22. The magnetic writer of claim 21, wherein at least a portion of a conductive coil is positioned within the gap layer.

23. The magnetic writer of claim 21, wherein the top pole includes a first top pole portion, a second top pole portion, and a top pole extension positioned therebetween, the first top pole portion positioned across the gap layer from the notch pole.

24. The magnetic writer of claim 23, wherein the top pole extension has a uniform width at the air bearing surface and a greater length along the air bearing surface than the first top pole portion..

25. The magnetic writer of claim 23, wherein the top pole extension orients a magnetization of the first top pole portion substantially parallel to the air bearing surface of the magnetic writer.